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EXAMINER

VARTANIAN, HARRY

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,719

Applicant(s)

STRUHSAKER ET AL.

Examiner

Harry Vartanian

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/02, 7/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 167-169, 308. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 15, and 16 are objected to because of the following informalities:

Claim 1, lines 9-10 recites "the burst data signal". Please correct to "the **first** burst data signal".

Claim 15, lines 6 recites "the burst data signals". Please correct to "the **plurality of** burst data signal".

Claim 16, lines 8 recites "the burst data signal". Please correct to "the **first** burst data signal".

Appropriate correction is required.

Art Unit: 2634

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 3-5, 8-10, 12-13, 15-17, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiue et al (WO 99/31837). Shiue et al's TDMA, which typically sends burst data, invention discloses a system wherein profiles of each subscriber link, i.e. channel, are maintained and stored by the basestation. Once the subscriber's time slot is open for communication, the basestation loads that particular subscriber's parameters. More specifically, Shiue et al meets the following limitations of claim 1:

a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the receiving station, said profile parameter determiner for determining a value of at least one parameter representative of communication of the burst data signal to the receiving station; and **Abstract; (Page 3, Lines 1-8);**

a profile parameter storage device coupled to said profile parameter determiner, said profile parameter storage device for storing values representative of the at least one parameter determined by said profile parameter determiner, the values stored at said profile parameter storage device to be used to facilitate receive operations performed at the receiving station of subsequent bursts of the first burst data signal. **(Page 9, Lines 5-16); (Pg 8, Lines 10-28 describe the receive operations for subsequent bursts)**

Regarding Claim 3, Shiue et al meets the following limitations:

wherein the at least one parameter determined by said profile parameter determiner comprises a channel-related parameter, the channel-related parameter representative of a channel condition of the first channel. **[(Page 7, Lines 20-26) Note: AGC, CTL, and Equalizer loops are "channel-related" parameters]**

Regarding Claim 4, Shiue et al meets the following limitations:

wherein the channel-related parameter determined by said profile parameter determiner comprises a value representative of fading exhibited upon the first channel. **[(Pg 12, Line 27 to Pg 13, line 8) Note: AGC parameters and equalizer weights are types of fading parameters]**

Regarding Claim 5, Shiue et al meets the following limitations:

wherein the receiving station comprises an equalizer for performing equalization operations when the at least the first burst data signal **(Page 7, Lines 20-26)**

Art Unit: 2634

wherein the value representative of fading exhibited when the first channel comprises an equalizer weighting value to be used by the equalizer during the equalization operations. **(Pg 12, Line 27 to Pg13, line 8)**

Regarding Claim 8, Shiue et al meets the following limitations:

the at least one parameter determiner by said profile parameter determiner comprises a signal-related parameter, the signal-related parameter representative of a signal characteristic of the first burst data signal transmitted when the first channel. **[(Page 7, Lines 20-26)Note: AGC, CTL, and Equalizer loops are "signal-related" parameters]**

Regarding Claim 9, Shiue et al meets the following limitations:

wherein the signal-related parameter determined by said profile parameter determiner comprises a value representative of a frequency characteristic of the first burst data signal. **[(Page 7, Lines 20-26) Note: A carrier tracking loop is a "frequency characteristic"]**

Regarding Claim 10, Shiue et al meets the following limitations:

wherein the signal-related parameter determined by said profile parameter determiner comprises a value representative of a time-shift characteristic of the first burst data signal. **[(Page 7, Lines 20-26) Note: equalizer is time shift related and synchronization helps to fix time shift problems]**

Regarding Claim 12, Shiue et al meets the following limitations:

the signal related parameter determined by said profile parameter determiner comprises a value related to power-levels of the first burst data signal. **[(Pg 9, line 17-26) Note: AGC deals with adjust the gain or the power of a received burst]**

Regarding Claim 13, Shiue et al meets the following limitations:

said profile parameter determiner is further coupled to receive an indication of at least one additional burst of the first burst data signal, **(Page 8, lines 10 to Pg 9, line 4)**

said profile parameter determiner further for determining an updated value of the at least one parameter responsive to the at least one additional burst of the first burst signal. **(Page 8, lines 10 to Pg 9, line 4)**

Regarding Claim 15, Shiue et al meets the following limitations:

wherein at least the first burst data signal transmitted upon the at least the first channel comprises a plurality of burst data signals transmitted upon a plurality of channels and **[Abstract; (Page 3, Lines 1-8); Note: Use of a many links represents separate channels]**

wherein said profile parameter determiner determines a value of a plurality of parameters representative of communication of the burst data signals and each of the plurality of channels. **Abstract; (Page 3, Lines 1-8);**

Regarding Claim 16, Shiue et al meets the following limitations:

Art Unit: 2634

responsive to reception at the receiving station of an initial burst of the first burst data signal transmitted upon the first channel, determining a value of at least one parameter representative of communication of the burst data signal to the receiving station; **Abstract; (Page 3, Lines 1-8);**

storing values representative of the at least one parameter determined during said operation of determining; **(Page 9, Lines 5-16) Claim 1**

using the values stored during said operation of storing to facilitate receive operations performed at the receiving station upon at least one subsequent burst of the first burst data signal. **(Page 9, Lines 5-16); Claim 1; (Pg 8, Lines 10-28 describe the receive operations for subsequent bursts)**

Regarding Claim 17, Shiue et al meets the following limitations:

detecting, at the receiving station the at least one subsequent burst of the first burst data signal; **Abstract; (Page 8, lines 10 to Pg 9, line 4)**

updating the value of the at least one parameter determined during said operation of determining responsive to the at least one subsequent burst detected during said operation of detecting. **(Page 8, lines 10 to Pg 9, line 4)**

Regarding Claim 19, Shiue et al meets the following limitations:

wherein the at least one parameter determined during said operation of determining comprises a channel-related parameter. **[(Page 7, Lines 20-26) Note: AGC, CTL, and Equalizer loops are "channel-related" parameters]**

Regarding Claim 20, Shiue et al meets the following limitations:

wherein the at least one parameter determined during said operation of determining comprises a signal-related parameter. **[(Page 7, Lines 20-26) Note: AGC, CTL, and Equalizer loops are "signal-related" parameters]**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

Art Unit: 2634

3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 2, 14, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue et al(WO 99/31837) in view of Unger et al(US PAT#6,230,326). Shiue et al meets all the limitations of claims 2, 14, and 18(see above rejections) except disclosing the use of a contention period and wherein the first parameter is determined during said contention period.

However, Unger et al's cable modem system describes the following:

"The cable modem listens for a UCD message which **includes an initial maintenance burst type** and when it detects one **it obtains the upstream parameters for the management channel**, block 703. The CM then carries out normal ranging and other initialization over the management channel, block 704. After completion of initialization..."(Column 6, Line 38-44)

Therefor it would have been prima facie obvious to determine communication parameters during an initialization or contention period. A motivation to combine is stated by Unger et al wherein he states that an initialization period prevents a communication link to start transmission that is not optimized, which can cause errors. (See Column 1, line 55 to Column 2, line 35)

5. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue et al(WO 99/31837) in view of Reza et al (US PAT#6,654,384). Shiue et al meets all the limitations of claim 6-7(see above rejections) except disclosing the use of antenna related parameters.

However, Reza et al's invention describes the following:

"... The wireless physical layer and the wireless media-access-control (MAC) layer collectively include a set of parameters, **which are adaptively modified by a base station controller for communication with a plurality of customer premises equipment. The base station controller adjusts communication with each customer premises equipment individually** and adaptively in response to changes in characteristics of communication, including physical characteristics, amount of communication traffic, and nature of application for the communication traffic." **abstract**

"In a preferred embodiment, physical parameters and MAC parameters include the following **physical parameters: antenna selection**--The base station controller 120 includes more than one antenna, and each customer premises equipment 130 includes one or more antennas. In a preferred embodiment, the

Art Unit: 2634

antenna selection parameter includes a choice of which one antenna at the base station controller 120 and which one antenna at the each customer premises equipment 130.” (Column 5, line 66 to Column 6, line 14)

Therefor it would have been prima facie obvious to determine and use antenna related parameters. A motivation to combine is stated by Reza et al wherein he states that since channel conditions change constantly overtime between a basestation and subscriber there is a need to communicate updated parameters in order to adapt. (See Column 1, line 21 to Column 1, line 62)

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue et al(WO 99/31837) in view of Hamdi (US PAT#6,345,071). Shiue et al meets all the limitations of claim 11(see above rejections) except disclosing the use of FEC related parameters.

However, Hamdi's ADSL system describes the following:

“The ADSL modem 710 operates according to Forward Error Correction (FEC), which is based on the Reed Solomon coding method. After power up and optional self-test, the **ADSL modem 710 participates in an activation and acknowledgment phase and transmits activate or tone requests to the ATU-C 202.** The ATU-C 202 responds with an activation signal or activation tones. The **ADSL modem 710 and the ATU-C 202 then determine the relevant attributes of the transmission medium 102** using transceiver **training and analysis procedures.** The ADSL modem 710 measures the **communication characteristics of the transmission medium 102**, such as the characteristic impedance, the SNR for each sub-channel, the line quality, etc. and generates an initial profile of the channel or transmission medium 102. **The initial profile includes bits** and gains (B&G) tables, **FEC parameters R** (redundant check bytes) and S (number of symbols per R-S codeword) values, the interleaver depth (D), and the power spectral density (PSD) level.” (Column 12, lines 18-35)

Therefor it would have been prima facie obvious to communicate FEC related parameters between a basestation and receiver. A motivation to combine is stated by Hamdi wherein he states that since channel conditions change consistently overtime due to line impedance changes there is a need to communicate updated parameters in order to retrain the modems and ADSL Termination Unit(ATU-C), which is similar to a basestation. (See Column 1, line 21 to Column 1, line 62)

Art Unit: 2634

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 571.272.3048. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571.272.3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
Art Unit 2634

HV



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